

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Canceled)

2. (Currently amended) ~~The~~^{An} assay method of~~as~~ claimed in claim 21 or 22¹
wherein said phosphatase-targeting toxin is produced by algae or by cyanobacteria.

3. (Currently amended) ~~The~~^{An} assay method of~~as~~ claimed in claim 21 or 22¹,
wherein the toxin to be determined is a hepatoxin or okadaic acid.

4. (Currently amended) ~~The~~^{An} assay method of~~as~~ claimed in claim 21, wherein said
phosphatase targeting toxin molecules present in the sample compete competes with said
second~~the~~ non-immobilized ligand for a limited number of binding sites on said first~~of~~ the
immobilized ligand and any toxin present in said sample is determined relative to the extent of
non-immobilized ligand bound or not bound to the binding sites of the immobilized ligand.

5. (Currently amended) ~~The~~^{An} assay method of~~as~~ claimed in claim 21 or 22,
wherein the proportion of said second ligand present in the bound fraction or in the unbound

fraction is determined and is indicative of the amount of the phosphatase-targeting toxin in said sample ~~presence or absence of a phosphatase targeting toxin is determined.~~

6. (Currently amended) The~~An~~ assay method of~~as~~ claimed in claim 21 or 22, wherein the sample ~~under investigation~~ is surface water, ~~or~~ water~~free~~ moisture ~~taken~~ from shellfish, ~~or~~ water taken from at the habitat in which ~~such~~ shellfish live, or water taken from domestic water supplies.

7. (Currently amended) The~~An~~ assay method of~~as~~ claimed in claim 21 or 22, wherein when the first ligand is a protein phosphatase, the second immobilized or non-immobilized ligand is an antibody or antibody fragment, and when the second ligand is a protein phosphatase, the first ligand is an antibody or antibody fragment.

8. (Currently amended) The~~An~~ assay method of~~as~~ claimed in claim 21 or 22, wherein the protein phosphatase ~~enzyme~~ is ~~the~~ binding ligand protein phosphatase 2A.

9. (Currently amended) The~~An~~ assay method of~~as~~ claimed in claim 21 or 22, wherein one of said first either the immobilized ligand or said second non-immobilized ligands carries a reporter moiety.

10. (Currently amended) The An assay method as claimed in of claim 9 wherein the secondnon immobilized ligand carries a reporter moiety.

11. (Currently amended) The An assay method ofas claimed in claim 10 wherein when the first ligand is a protein phosphatase enzyme, the secondnon immobilized ligand is a labeledlabelled peptide hepatotoxin or labeled okadaic acid.

12. (Currently amended) The An assay method ofas claimed in claim 11 wherein the hepatotoxin is selected from nodularin, microcystin LC or microcystin YR.

13. (Currently amended) The An assay method ofas claimed in claim 21 or 22, wherein the solid support is a dipstick or solid matrix.

14. (Currently amended) The An assay method ofas claimed in claim 13 wherein the solid matrix is polymeric or magnetic beads.

15.-20. (Canceled)

21. (New) A method for determining the presence of a phosphatase targeting toxin in a sample comprising:

(A) contacting a first ligand, wherein said first ligand is immobilized on a solid support, with:

- (i) a sample suspected to contain a phosphatase-targeting toxin, and
- (ii) a second ligand,

wherein said first ligand is a protein phosphatase enzyme and is capable of binding, in a competitive manner, said phosphatase-targeting toxin and said second ligand, or said second ligand is a protein phosphatase enzyme and is capable of binding, in a competitive manner, said phosphatase-targeting toxin and said first ligand;

(B) separating a bound fraction from a non-bound fraction, and

(C) determining the presence of said second ligand in the bound fraction or in the non-bound fraction, wherein the presence of said second ligand in either the bound fraction or the non-bound fraction is indicative of the presence of said phosphatase targeting toxin in said sample.

22. (New) A method for determining the presence of a phosphatase-targeting toxin in a sample comprising:

(A) contacting a first ligand, wherein said first ligand is immobilized on a solid support, with:

- (i) a sample suspected to contain a phosphatase-targeting toxin, and
- (ii) a second ligand,

wherein said first ligand and said second ligand are capable of simultaneously binding said phosphatase-targeting toxin, or

said first ligand is capable of binding to said phosphatase-targeting toxin, and said second ligand is capable of binding to a complex of said phosphatase-targeting toxin and said first ligand, or

 said second ligand is capable of binding to said phosphatase-targeting toxin, and said first ligand is capable of binding to a complex of said phosphatase-targeting toxin and said second ligand,

 wherein at least one of said first ligand and said second ligand comprises a protein phosphatase;

 (B) separating a bound fraction from a non-bound fraction, and
 (C) determining the presence of said second ligand present in the bound fraction or in the non-bound fraction, wherein the presence of said second ligand in the bound fraction or the non-bound fraction is indicative of the presence of said phosphatase targeting toxin in said sample.

23. (New) The method of claim 21 or 22, wherein said first ligand is indirectly immobilized on the solid support.

24. (New) The method of claim 21 or 22, wherein said first ligand is directly immobilized on the solid support.

25. (New) The method of claim 21 or 22, wherein the presence of said second ligand in the bound fraction or the presence of said second ligand in the unbound fraction is determined directly.

26. (New) The method of claim 21 or 22, wherein the presence of said second ligand in the bound fraction or the presence of said second ligand in the unbound fraction is determined indirectly.

27. (New) The method of claim 21 or 22, wherein the presence of said second ligand in the bound fraction or the presence of said second ligand in the unbound fraction is inversely related to the presence of the phosphatase-targeting toxin in said sample.

28. (New) The method of claim 21 or 22, wherein the presence of said second ligand in the bound fraction or the presence of said second ligand in the unbound fraction is directly related to the presence of the phosphatase-targeting toxin in said sample.

29. (New) The method of claim 21 or 22, wherein both the first ligand and the second ligand comprise protein phosphatase enzymes.